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Brazil's Farm Policies Boost Output, Exports

By Leon G. Mears

In Brazil, agriculture is king. The booming farm sector accounts for about 70 percent of the country's export earnings, without mentioning the raw materials for manufactured exports like textiles and leather goods. A myriad of Government programs has helped boost farm output and exports, which will have long-range effects on world trade. The result today: A trade surplus for the first 6 months of 1977—Brazil's first in 4 years.

Brazil's boom in farm production and exports will have far-reaching effects on future world trade in a wide spectrum of agricultural products. Foremost among several factors contributing to this upsurge is the Government's accent on agriculture—and this top priority is likely to continue.

Taking the lead to help agriculture, Brazil's president Ernesto Geisel has strongly supported production incentives and development programs that have been either initiated or strengthened in the last 2-3 years. Government leadership in these areas is expected to continue as the country tries to combat its balance-of-payment problem and high inflation rate.

No other country in the world can match Brazil's recent rapid increase in agricultural exports or its outturn of a wide variety of agricultural products. These achievements, combined with strong Government support and Brazil's untapped agricultural resources, point to sharp export expansion.

High world prices for coffee, soybeans, and cocoa account for much of the current farm prosperity, but larger volume shipments are being registered for corn, rice, tobacco, cotton, citrus products, poultry meat, and a variety of other products.

With exports on the upswing, Brazil is becoming further entrenched as a major competitor of the United States in world markets.

Current estimates project Brazilian farm exports this year in the range of $8-$8.5 billion, compared with the 1976 record of $6.1 billion. In recent months, farm products have comprised about 70 percent of the country's export earnings. Additionally, agriculture provides raw materials for textiles, leather goods, and several other industries that produce much of Brazil's manufactured exports.

Brazil's total exports during the first 6 months of 1977 reached $6.2 billion, giving the country a trade surplus of $235 million.

However, Brazil may have difficulty maintaining the surplus during the last half of 1977 if coffee and soybean prices continue their downward trend.

The Government's favorable treatment of commercial farmers covers many facets of production and trade, including:

- Minimum prices for agricultural products;
- Attractive credit arrangements for production requisites, such as machinery, seeds, and fertilizers;
- Heavy allocation of Government funds for agricultural research and extension centers;
- Improvement of rural infrastructure;
- Low farm real estate taxes; and
- Many marketing and export incentives.

On the other hand, Brazil's farmers face domestic price controls on many products, export taxes on several commodities, and State and Federal value-added taxes.

Brazil's export incentives include tax credits for many agricultural processed exports, and subsidized credits to finance export operations. The Brazilian cruzeiro was devalued 16 times in 1976 and 14 times in 1975. These mini-devaluations were designed to compensate for the differences between Brazil's high inflation rate (46 percent in 1976 and rarely less than 20 percent in recent years) and lower inflation prevailing in countries that are Brazil's principal trading partners.

Tax credits to make exports more competitive exist for several processed commodities, such as vegetable oil and orange juice concentrate. (The tax credit for soybean oil is scheduled to terminate by the end of 1977.) Exporters benefiting from these incentives receive credits, which are applicable against their tax liabilities for the Federal and State value-added taxes. Also, profits from a number of exports are excluded from taxable income.

Some exporters get subsidized credit to cover production costs. During 1977, they can borrow 20-40 percent of the value of 1976's exports for 360 days at 8 percent annual interest. Items benefiting from this include meat products, orange juice concentrate, milled grain, cocoa products, oils and fats, oilseed meal, and tobacco.

Export taxes are imposed on cocoa and coffee—with taxes on the two being adjusted periodically in response to world prices.

An export tax on soybeans was dropped August 18, 1977, because of declining world prices. This tax will be reimposed if the world soybean price begins to rise again.

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Revenues from the 10-percent export tax on cocoa pay for the Government's cocoa research and technical aid program.

Also, the Government has a monopoly on sugar, buying it at pre-set prices. Profits from sugar exports go into an export fund financing research, subsidies for home production and consumption, as well as covering export losses when world prices fall below the domestic price.

While most of Brazil's exports are made by private companies or cooperatives, two Government-controlled "trading companies" also compete in export markets. In addition, the Government has traditionally controlled exports of sugar and imports of wheat. Sometimes the Government moves into other trade areas—especially the import of critical food items, such as dry beans, rice, and dried milk.

In an effort to balance its current accounts, the Government imposed many restrictions on imports. Import licenses are still required for many commodities, as are 360-day, 100-percent prior deposits on imports, and import duties are high. In addition, so-called "nonessential" imports were prohibited until recently. This ban applied to a wide variety of agricultural products of trade interest to the United States, including apples, pears, dried fruits, and peas. Many of these barriers do not apply to countries of the Latin American Free Trade Association (LAFTA).

However, the ban on import licenses was partially lifted August 9, 1977, for an array of agricultural items, including apples, pears, and dried fruits—but not for peas.

Several ministries share responsibility for forming and implementing Brazil's farm policy. The Ministry of Agriculture controls production and food supply programs, and also plays an important role in the Ministry of Interior's regional development program. Besides having the final say on price and credit policies, the Ministry of Finance influences foreign trade policy and, through the Bank of Brazil, is responsible for domestic wheat purchases. In addition, policies are coordinated with several interministerial councils.

The Government's minimum price policy is administered by the Production Financing Commission (CFP), an agency of the Ministry of Agriculture. Loans under the minimum price program—currently covering 45 products—totaled more than $1 billion in 1976.

Excess production purchased under this program is often used as "regulatory stocks" to keep consumer prices down during periods of upward price pressure. The CFP uses two basic tools to support its minimum prices. The Federal Government Loan (EGF) permits the farmer to hold his product—either in Government-designated warehouses or on his own farm—until prices improve. The Federal Government Acquisition (AGF) enables the Government to assume ownership of commodities under EGF when they are not claimed by the producer before his loan becomes due (as when market prices do not rise above the minimum price).

Another major factor in Brazil's rapid agricultural development has been low-interest credit. Although basic annual interest rates vary from 13 to 22 percent, rates for loans granted under the auspices of special regional and sectorial development programs can be as low as 7 percent. In view of the high inflation, these rates are very favorable.

In recent years, Brazil has initiated special regional development programs to provide incentives for the agricultural development of frontier or chronically low-income areas. The principal tools are investment credits at favorable terms for private investors. In addition, the programs usually include direct Government investments in infrastructure, research, and extension.

The most important of these programs is POLOCENTRO—the special program for the development of the cerrados. This vast, but thinly settled, savanna area in central Brazil covers 15 percent of Brazil's land surface. During 1975-77, some $1 billion has been allocated for this program.

The goal of POLONORDESTE is to bring the northeast's agricultural growth rate to the level of its industrial growth. Between 1975 and 1979, this program will have invested about $700 million into agriculture. The POLOAMAZONIA plan is coordinating a $550-million investment in agricultural and mineral development at 15 priority areas in the Amazon Basin. About one-quarter of the total investments is for agricultural projects.

In southern Mato Grosso, PRODEGRAN will bring about 700,000 hectares into production of soybeans, corn, rice, and wheat.

Funds ticketed for the program during 1976-79 total $1.7 billion, with $470 million in direct Government investments.

In addition to regional development, the Government has begun several programs to assist certain sectors of the agricultural economy. These programs also depend mainly on subsidized credit for farmers, cooperatives, and agribusinesses.

This year, the National Livestock Development Pro-

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gram was formed by combining five livestock programs. The program provides farmers and ranchers with low-interest loans and technical assistance to improve pastures, dairy and beef breeding stock, and production techniques.

The Swine Development Program is aimed at improving pork production and marketing systems in southern Brazil, through technical assistance for health and genetic improvement, construction and modernization of slaughter plants, and new systems to help domestic and export marketing of pork and pork products.

The National Alcohol Program provides incentives for production of alcohol for mixture with gasoline. By the early 1980's, this program envisions the production of 4 billion liters of alcohol from sugarcane and manioc (cassava), which would account for 20 percent of the country's gasoline needs. About $1.6 billion will be spent on this program.

The Brazilian Government also favors the growth of farm cooperatives, which are viewed as a way to improve farm incomes while counterbalancing the power of multinational companies.

The National Program for the Development of Cooperatives helps through sponsorship of training courses of co-op members, technicians and managers, and by providing management assistance to cooperatives. The goal is to double the membership from 1.3 million to 2.6 million by 1979.

The Brazilian Agricultural Research Enterprise (EMBRAPA) was formed in 1973 as part of a sweeping reform of the country's agricultural research institutions. The Government has given priority to EMBRAPA—its 1976 budget was $88 million. The organization is financing graduate level education—both in Brazil and abroad—for hundreds of researchers. EMBRAPA has established 15 National Research Centers devoted to specific commodity and natural resource problems. State research programs which meet the approval of EMBRAPA receive a subsidy from the national organization.

Under the Brazilian Enterprise for Technical Assistance and Rural Extension (EMBRATER), founded in 1975, the Government envisions a more unified national system for technical assistance and extension, with EMBRATER setting overall policies for the State services. In 1977, the EMBRATER system had around 5,000 field technicians.

Responsibility for Brazil's overall food policy lies with the National Food Supply Council (CONAB), an interministerial policymaking group. Food policies seek to assure adequate supplies of basic foodstuffs as well as keep food prices in balance with consumer purchasing power. In case of shortages or price speculation in the domestic market, the Government resorts to imports. As an instrument of price regulation, the Government also holds stocks of the more important staples, such as beef, dairy products, rice, and beans.

Besides CONAB, two agencies also are involved in the nation's food policies. The National Food Supply Superintendency is responsible for food market studies, inspection and control of prices, and the import and marketing of wheat. The Brazilian Food Company, organized as a public enterprices, carries out the Government's food supply programs. To do this, it buys, sells, transports, exports, and imports food and agricultural inputs. □

Brazil Aids Exports Of Sisal Baler Twine

By Peter Buzzanell

Encouraged by Government export incentives, Brazil's exports of sisal baler twine have soared to new highs in sharp divergence from the country's traditional reliance on exports of raw sisal fiber.

This change, intended to reap the benefits of added processing, has been largely responsible for the drawdown of sisal stocks accumulated since the end of 1975.

Concurrently, it has challenged sisal processing industries in the European Community (EC), which now find one of their traditional raw-material suppliers suddenly a competitor.

Sisal baler twine exports from Brazil for 1977 are projected to reach a record 68,000 metric tons, up 13 percent from the previous record export in 1976.

The growth in Brazil's sisal baler twine exports reflects the trend toward expanding the export of processed sisal products rather than raw sisal fiber.

In 1970, sisal processed cordage products—mainly baler twine—accounted for only about 9 percent of total sisal exports by volume.

By 1976, sisal cordage products represented 36 percent of total sisal exports. Projections for 1977 have sisal cordage exports about equal to the estimated 137,000 tons of total sisal exports.

Brazil's emergence as a cost-competitive exporter of sisal baler twine results in part from the benefits of export incentive policies provided by the Government of Brazil, such as periodic minidevaluations of the cruzeiro and export tax credits.

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Brazil: Sisal Exports, 1970-77

Year	Fiber and tow	Cordage	Total	Cordage as share of total
	1,000 M.T.	1,000 M.T.	1,000 M.T.	Percent
1970	148.8	14.1	162.9	9
1971	147.4	15.6	163.0	10
1972	152.1	19.7	171.8	11
1973	160.2	28.9	189.0	15
1974	139.0	37.2	176.2	21
1975	51.9	21.1	73.0	32
1976	108.9	60.4	169.3	36
1977 [1]	69.0	68.0	137.0	50

[1] Forecast. Exports of baler twine during January-June 1977 totaled 43,000 tons.

Apart from world price shifts, the basic determinant in the Brazilian twine situation is the external value of the cruzeiro and the level of internal costs to which it relates.

In 1976, the Central Bank of Brazil devalued the cruzeiro 16 times—a total of 26.5 percent. Through July 21, 1977, the cruzeiro had been devalued eight times—a total of 15.3 percent.

These mini-devaluations have helped to maintain Brazil's competitive position in the global natural twine market and thereby have compensated for the difference between the high rate of Brazil's domestic inflation—46 percent during 1976—and the lower inflation rates of Brazil's competitors.

Sisal baler twine, like many commodities in the Brazilian export sector, also benefits from export tax credits that help to make the product more competitive in the world market.

Specifically, the Government provides twine exports with 7 percent tax credits on the federally imposed tax on manufactured products (IPI) and the state-imposed tax (ICM) as well as a waiver of 4 percent on the IPI. (Currently, total export incentives for sisal baler twine amount to 36 percent of f.o.b. value.)

Such export incentives are typical of Brazil's comprehensive program to solve the country's persistent balance-of-payments problem while mitigating the impact of its high rate of domestic inflation.

Concurrent with fostering the increase of processed sisal exports, Brazil's export policies have sought to facilitate the drawdown in record stock levels that had accumulated at the end of 1975.

Sisal stocks, almost all of which were in the hands of the Production Financing Commission (CFP)—Brazil's agency administering the sisal agricultural price program—reached a peak at the end of 1975 of an estimated 122,000 tons.

During the second half of 1975 export demand eased and f.o.b. prices declined from an average $655 per ton in January-June to $417 during July-December, compared with an average $821 for all of 1974 relative to the minimum producer price of about $500 per ton. As a result, the CFP was forced to build up record stocks to maintain the incomes of sisal producers concentrated in the economically depressed northeast.

In December 1975, CFP began to sell its stocks of sisal to exporters and baler twine manufacturers at prices below the minimum price paid producers. CFP's policy at that time was to avoid selling to exporters at prices so low as to give Brazilian sisal—after being processed into baler twine in Europe—the ability to compete with Brazil's baler twine exports to the large U.S. and Canadian markets.

By the end of 1976, stocks of sisal had been reduced to 70,000 tons or 43 percent below the record level of the previous year, owing to record exports of baler twine, a doubling of raw sisal exports, increased domestic consumption, and a smaller 1976 outturn.

For 1977, somewhat improved export prices and stronger demand—especially for baler twine—are expected to facilitate further the drawdown in stocks to about 40,000 tons.

Although sisal fiber and sisal baler twine accounted for only $60.5 million or less than 1 percent of total Brazilian export earnings of $10.1 billion in 1976, they are of critical significance to wide areas of the dry, economically depressed northeast area.

The economic stagnation of the northeast is, in large part, attributable to the climate, which is characterized by extreme dryness and irregular rainfall. In many of the producing areas, sisal is practically the only crop of commercial value that can grow and survive the droughts.

The sisal incomes of producers, as well as those in the processing and export service industries, therefore provide important sources of earnings to the region.

The major markets for Brazil's sisal baler twine are the United States, Canada, and the European Community (EC). In 1976, the United States was the major buyer of Brazilian baler twine, taking over 80 percent of total exports.

Owing to its competitive prices and expanding processing industry, Brazil has been gaining a larger share of the U.S. natural twine market, thereby displacing traditional European sources.

U.S. baler twine imports in 1976 totaled 93,918 tons, valued at $40.7 million, of which Brazil accounted for 38 percent of the volume and 35 percent of the value.

U.S. imports of baler twine for the first 6 months of 1977 totaled 51,770 tons, valued at $22 million, with Brazil supplying 50 percent of the volume, compared with 37 percent for the corresponding period a year earlier.

Unit import values, f.o.b. origin, for baler twine from all sources during January-June 1977 averaged $426 per ton ($7.72 per 40-lb bale) compared with $433 per ton ($7.84 per 40-lb bale) for the same period in 1976.

Brazil's unit import values for both periods were under the average unit prices for all imports at $417 and $411 per ton during January-June 1977 and 1976, respectively.

Despite a 13-percent ad valorum duty, Brazil shipped a record volume of twine to the EC in 1976, resulting in complaints from the EC sisal processing industry.

Owing to increased competition from sisal twine imports from producer countries such as Brazil, and synthetics as well as reduced raw sisal imports, EC twine production fell from 258,000 tons in 1973 to a total of 130,000 tons in 1976.

At the 12th session of the United Nations Food and Agriculture Organization's Intergovernmental Group on Hard Fibers in New Delhi during March, the EC stressed that pricing policies of some producer-processor countries were contributing to increased consumption of synthetics and to the decline of its domestic sisal twine production.

In 1976, for example, sisal baler twine was selling in the EC for virtually the same price as raw fiber. For these reasons, the EC sought at the meeting an informal indicative price arrangement for twine similar to that already in place for raw sisal (the current FAO indicative price for raw fiber is $450-$550 per ton, East Africa UG Grade, c.i.f. Europe).

The EC stressed as a minimal requirement that a price differential should exist between fiber and twine on the order of $220 per ton.

However, the Group was unable to agree on an indicative price for twine, given the divergent views of the producing and consuming countries. It is expected that the EC will raise the issue again at FAO and UNCTAD meetings on hard fibers later this year. □

Soy Protein Usage Expanding in Japan

By Lloyd M. Reid

Japan's consumption of soy protein products—such as soy flour, concentrates, isolates, and textured soy protein—is expanding. The American Soybean Association first introduced soy protein products to Japan about 15 years ago, and today 13 manufacturers of soy protein items produce about 55,000 tons of dry soy protein annually for use in both traditional foods and Western-type dishes popular with younger Japanese.

Soy protein products such as concentrates, isolates, and textured soy protein (TSP) are achieving wide consumer acceptance in Japan, where national food self-sufficiency is low, population density is high, and the reliability of foreign sources of food commodities is of major concern to the Government.

Although soybeans have been an important food in Japan for centuries, it is only in recent years that soy protein products have begun to play a major role in production of consumer foods and animal feeds.

Soy protein sales in Japan during 1976 were up more than 20 percent from the 1975 level, and annual increases of 15-20 percent are expected over the next several years. Annual gains in soy protein use appear to be a long-range trend.

Japan in 1977 again is the top customer for U.S. soybeans. Of the 3.5 million tons of soybeans imported by Japan from all sources during calendar 1976, the United States supplied about 3.2 million tons, compared with 3 million in 1975; Brazil, 126,000 tons, compared with 44,000 tons in 1975; and the People's Republic of China, 133,000 tons, compared with 240,000 tons in 1975.

Soybeans for many years have been processed into several kinds of traditional foods suited to the Japanese palate: Tofu (soybean curd, of which 10 million bricks are sold daily in Japan), miso (fermented soybean paste, the basis for the soup served at most Japanese meals), aburaage (deep-fried tofu), frozen tofu (tofu frozen and dehydrated), natto (fermented cooked soybeans), kinako (roasted soybean powder), and shoyu (soy sauce).

Although these traditional soy protein foods are firmly established components of the individual Japanese diet, the introduction of Western foods to Japanese retail food markets and institutional food serving organizations—plus the food preferences of the younger generations in Japan—are changing the country's basic food consumption pattern.

The American Soybean Association (ASA) first introduced new soy protein products to Japan about 15 years ago through seminars, promotion literature, baking tests and demonstrations, TSP taste preference tests, in-store promotions with sampling of soy protein foods, newspaper and magazine articles, and television demonstrations.

Stimulated by these ASA market-development activities the Japanese soybean processing industry about 10 years ago began the manufacture of soy flour, concentrates, isolates, and TSP.

Today, there are 13 manufacturers of these soy protin products in Japan, turning out about 55,000 tons of dry soy protein annually. Some of these companies are joint ventures with U.S. soy protein firms, while others have technical service agreements with U.S. companies.

ASA estimates that this new market for soybeans will grow rapidly during the next few years and that about 500,000 tons of whole soybeans will be going into production of refined soy protein materials by 1981.

In 1975, these soy protein manufacturers, with assistance and guidance of the Japanese Ministry of Agriculture and Forestry (MAF), organized the Japan Vegetable Protein Food Association. The Government, recog-

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Above: A Japanese home economist, assisted by television staff, serves samples of soy protein ground meat dishes. Left: Man samples one of the soy protein dishes prepared during a TV show.

Soy Protein's Many Uses

Soy protein is used in varying amounts in the preparation of numerous Japanese foods. Types of soy protein, their uses and amounts (in whole soybean equivalent) during 1976 were:

Tofu (soymilk curd) flour: Used in commercial and household preparation of dishes served at virtually every Japanese meal—80,000 tons.

Soy flour: Bread, biscuits, noodles—15,220 tons.

Soy isolates and concentrates: Sausage, ham, frozen hamburger, frozen gyoza (Chinese-style dumplings, shumai, ganmodoki (frozen tofu patty), kamaboko (fishcake), fried kamaboko, powdered eggs, coffee whitener, white sauce, wheat-soy noodles—65,424 tons.

Textured soy protein: Hamburger, meatballs, meat sauce, sloppy joe sauce, ground meat, gyoza, shumai, croquettes, minced cutlets, sausage—15,220 tons.

Structured and spun soy protein: Ham, sausage, soy corned beef, chicken balls, hamburger, dry meat, furikake (a seasoning for sprinkling over food)—5,076 tons. □

nizing the importance of utilizing soy protein in the diet, in 1976 supplied financial aid to the association.

ASA and Western Wheat Associates in 1976 started a joint vegetable protein promotion with the Vegetable Protein Food Association that resulted in 34 seminars in various parts of the country on the economic and functional values of soy and wheat protein in Japanese foods.

These seminars were directed toward institutional food service personnel—a total audience of about 3,000 specialists—in hospitals and company restaurants, university home economics teachers and students, meat and fish processing technicians, and food manufacturing personnel.

In addition, 12 in-store demonstrations, featuring samplings of vegetable protein foods, were conducted at various supermarkets and department stores.

As a result of these promotions, five large food companies began marketing through supermarkets consumer packages of TSP to be mixed with ground meat for hamburgers. At about the same time, seven soymilk manufacturers began marketing soy milk through department stores and supermarkets. One large supermarket chain—Seiyu—

now markets its own brand of soy milk.

Sloppy joe sandwiches—a popular item on school lunch menus—include 30 percent soy protein, soy wheat noodles, and soy protein butter-margarine spread.

Another factor that will affect Japan's sources of protein food is the coming enforcement of the 200-mile international fishing law. Japan's total fish catch is certain to be lowered as a result of this enforcement.

For example, the 1.1-million-ton catch of surimi (mashed fish meat) used for fishcakes in Japan each year appears likely to be reduced to about 700,000 tons.

Using 15 percent soy isolates with this fish meat would require about 25,000 tons of soy protein product annually—a significant potential market to be developed.

Market development activities in which ASA participated during fiscal 1976 included:

School Lunch Institute seminars (3). Conducted for 750 school food service personnel. Many new soy protein and products, such as soy protein bread, soy protein wheat noodles, soy protein 50 percent (pork) cutlet, soy milk, were introduced and accepted favorably.

Food Processors-Food Industry Study Team. A seven-member team of food industry executives visited five U.S. soy protein manufacturers and three U.S. universities. As a result, two Japanese manufacturers are producing consumer package soy protein materials for sale at retail outlets.

Consumer Education and Publication of Recipes—Japan Home Extension Service. ASA and the Home Extension Service conducted a series of seminars and cooking classes for rural homemakers on using soy protein as meat extenders and for other uses.

Consumer Education on Soy Protein—Soy Protein Recipes. ASA sponsored publication of 160,000 copies of a recipe and nutrition booklet for distribution at 4,600 cooking classes through the Japan Nutrition Association featuring soy protein (new type) and cooking with soy oil.

Cooperative Group Exhibits and Events. ASA participated in one large food show and one small food show, with total attendance of 60,000. □

EC Herd Totals Hold Steady

European Community (EC) milk cow numbers may be sustained this summer as farmers maintain their dairy base while awaiting details regarding herd reduction programs of their national governments.

These programs will reflect the EC's intended nonmarketing and conversion programs that are to be offered to EC dairymen.

These programs, which may be offered in all EC countries except Italy, will appeal primarily to owners of relatively small herds.

Farmers renouncing dairying for 5 years, or farmers agreeing to convert within 4 years from dairy to beef, will be offered premiums for fulfilling contract terms. □

Dry Weather To Cut Philippine Copra Crop

By Stuart E. Proctor, Jr.

After producing a record 2.6 million metric tons of copra in 1976, the Philippines' output for this year is forecast to decline significantly to 2.4 million tons, owing to below-normal rainfall during the critical periods of nut set and development. Production of peanuts, soybeans, and castor beans, however, is expected to increase.

The volume of coconut product exports, which increased sharply during 1976, is also forecast to be lower in 1977. Shipments of copra are likely to drop off substantially—possibly as much as 40 percent—but this will be offset partially by bolstered exports of oil, cake, and meal, as well as of desiccated coconut.

Copra production in 1976 was 20 percent above the 2.2 million tons produced in 1975. The lagged response of coconut production to less-than-favorable rainfall during the past 2 years began to show during the second half of 1976, as output was below trend and smaller than production during the first 6 months of the year. Generally, production during the second half of the year is greater than during the first half.

Registered exports of copra in 1976 totaled 834,910 tons, slightly above the previous year's shipments of 827,298 tons. Western Europe was the Philippines' largest customer, taking 90 percent of these shipments in 1976. Other importers included Japan (63,356 tons) and the USSR (10,051 tons).

The volume of copra crushed commercially for oil and meal in 1976 is estimated at 1.7 million tons—34 percent above that of 1975. Approximately 66 percent of the 1976 copra outturn was crushed for oil, compared with 59 percent a year earlier. The copra equivalent of fresh nuts consumed for food and home crushing for oil amounted to some 50,000 tons.

Coconut oil production—excluding home-crushed oil—in 1976 is estimated at 1.1 million tons, compared with the previous year's 824,000 tons. An estimated 254,000 tons of commercially produced oil is used domestically.

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Registered exports of coconut oil in 1976 from the Philippines reached a record high of 821,585 tons, with the United States continuing as the major buyer (540,184 tons), taking 66 percent of the total. Western Europe was the second largest destination, importing 180,591 tons. The USSR and the People's Republic of China took 49,404 tons and 10,161 tons, respectively.

Philippine copra cake and meal output in 1976 amounted to some 561,000 tons, with slightly over 75,000 tons for domestic use, a considerable increase over 1975 levels. Exports of copra cake and meal in 1976—at 483,334 tons—were 63 percent greater than those of a year earlier. Practically all shipments were to Western Europe, except for some 746 tons exported to Japan.

Fueled by strong foreign demand, desiccated coconut production totaled 75,869 tons during 1976, compared with 57,917 tons a year earlier. Domestic consumption is negligible. Shipments of desiccated coconut amounted to 81,006 tons, 44 percent higher than 1975's exports. The United States took 57 percent of this total.

As a result of the reduced copra output forecast for 1977, shipments of copra and oil (in terms of oil) are expected to be 1.2 million tons, 10 percent lower than 1976 exports. It is expected that shipments of copra will be sharply lower, in line with Government policy to expand the volume of copra crushed and to phase out exports of copra. Thus, exports of oil and cake and meal will be up significantly.

Since 1955, there have been significant shifts in the composition of coconut product exports. Twenty years ago, coconut oil accounted for some 12 percent of total coconut product exports. By 1976, that percentage had risen to 45 percent of total exports. Similarly, the percentage of total coconut oil and desiccated coconut exported to the United States has trended downward, accounting for 66 percent and 57 percent, respectively, in 1976, compared with 87 and 88 percent in 1968.

Export prices of coconut products in 1976 had mixed trends. Prices of copra and coconut oil were down 17 percent and 8 percent respectively, compared with 1975 prices. However, the price of desiccated coconut rose 1 percent in 1976 and copra cake and meal prices were up 2 percent.

Recent policy developments in the Philippines regarding coconut and coconut products include:

- The start of the Government's massive coconut replanting program in June 1977; (Some 40,000 hybrid seed nuts, part of the 70,000 seed nuts imported last year, were to be planted on 50 selected farms.)
- Government-encouraged investment in coconut oil processing; (Coconut oil milling—previously deleted from the country's investment plan—has recently been approved by the President for further investment. Participation of foreign equity in oil milling has been limited to 40 percent, however.)
- The Philippine International Trading Corporation's plan to put up a coconut oil depot in the Netherlands and other countries in Western Europe to service small orders ranging from 400 to 500 tons.
- An increase in the stabilization levy on copra from 30 pesos per 100 kilograms to 60 pesos by the Philippine coconut authority.

The revenue will provide funds necessary to pay processors of domestically sold coconut products, such as soap, detergents, cooking oil, and cake and meal.

Philippine production of peanuts in 1975/76 was estimated at 40,782 tons, an increase of 13 percent over year-earlier levels, owing to an 11-percent increase in area to 60,620 hectares. The 1976/77 peanut crop is forecast to rise by as much as 10 percent.

Philippine farmers have continued to increase peanut area owing to strong demand and favorable prices. Destruction of cigar tobacco seedlings in the Cagayan Valley during the past 2 years forced farmers to switch to secondary crops, contributing to expansion in peanut area.

Domestic production of soybeans in 1975/76 is placed at 8,670 tons, compared with 5,568 tons a year earlier. Imports of soybeans in 1976 totaled 11,153 tons, mostly for crushing. The United States supplied 57 percent of this amount.

Soybean meal imports were up 87 percent in 1976 to 76,025 tons. The U.S. share of this market, however, continues to decline. The United States supplied 78 percent of total soybean meal arrivals in 1974, 26 percent in 1975, and only 9 percent in 1976. □

Rhodesia's Economy Hit By Harvest Shortfalls

Disappointing harvests in Rhodesia and the resulting slowdown in the country's agriculture are expected to have a depressing effect on the Rhodesian economy.

Exports of corn and tobacco—two of the crops adversely affected—usually account for nearly half of the country's foreign-exchange earnings. However, there have been no public indications of food shortages.

In June, the Government extended the total time required for military service to a minimum of 190 days a year for young men. Men over 50 are being encouraged to enlist for part-time service.

Shortages of qualified workers are proving to be more harmful to the Rhodesian economy than the international trade sanctions that have been in effect during the past 11 years. Although more women and blacks are employed than previously, many workers are on the job 12 hours a day to meet production and service demands.

Rhodesia's European population had in general been increasing prior to 1976, but in that year it dropped by 7,073 to 273,000, while the African population increased by 3.6 percent to 6.3 million. Emigration of Europeans thus far in 1977 has accelerated from the 1976 pace.

In the fiscal year ending June 30, national defense costs replaced education as the largest single category of public expenditures and amounted to about one-fourth of the Government's total $849 million outlays.

Agricultural subsidies accounted for about $27.1 million, of which about $12.4 million was paid to farmers unable to continue operating normally because of military service or guerilla attacks. □

By Lawrence A. Witucki, Foreign Demand and Competition Division, Economic Research Service.

FAS Grain Report Reveals Minor Output Changes

The most significant developments in the world wheat and coarse grain situation since the FAS grain report of July 18,[1] have been some relatively small changes in production forecasts, including decreases for both the United States and the USSR. These, and other smaller production forecast changes, have reduced the 1977 world grain crop forecast by about 1 percent and also reduced the global stocks buildup projected for the end of the 1977/78 season.

Revisions of prospective trade volumes for 1977/78 have been generally offsetting; most notable changes, however, are the lowering of the estimate of net imports for Western Europe and the increase in the forecast of India's wheat exports.

The current forecast of 1.08 billion metric tons for 1977 world wheat and coarse grain production is about 11 million tons below the July 18 estimate. This would still leave this year's crop as the second largest—down only 1.8 percent from last year's record level.

The decrease since mid-July is mainly a result of a 5-million-ton reduction in wheat crop prospects in the USSR, plus a 5.6-million-ton decline in the U.S. coarse grain production estimate. Several exporter-nation crop forecasts are also down.

Ending stocks in 1977/78 now are projected at 186.2 million tons, down from the July 18 projection of 195.8 million, but well above the estimated 168.8 million in 1976/77.

The 5-million-ton decrease in the 1977 **USSR** production estimate, all in wheat, was reflected in a smaller-than-expected stock buildup. This reduction in the wheat estimate is because of the poor spring wheat conditions; the winter wheat crop is expected to exceed substantially the record of 49.4 million tons harvested in 1973.

Although wheat harvest activities in large parts of the European USSR were hampered by rains in July, the weather later improved, facilitating the gathering of the crop. A total Soviet grain crop estimate of 220 million tons includes 105 million of wheat, 100 million of coarse grains, and 15 million of miscellaneous grains, rice, and pulses. If achieved, the crop would still be above the Soviet plan figure of 213 million tons and would be the third biggest on record.

Adverse weather during the last month has also reduced crop prospects for some of the world's major grain exporting countries. Reports of localized but persistent dry conditions throughout sections of **Canada's** grain-producing region have tempered earlier, more optimistic reports about the crop and prompted a 1-million-ton reduction in the wheat production estimate. Wheat ending stocks are expected to be down by a similar amount.

Although Canada's crop this year is expected to be down over 30 percent from last season's level, current export commitments already indicate continued large exports this season.

Generally dry conditions in **Argentina** have continued, with parts of the wheat area still unplanted. Argentina's 1977 wheat production, already expected to be down sharply from last season's level because of farmer dissatisfaction with wheat price relationships, is currently estimated at 7 million tons, down 500,000 tons from last month's estimate.

Dry conditions have also persisted in **Thailand's** corn producing regions, further reducing expectations for that crop. The 600,000-ton decrease in the estimate of Thai corn production will be fully reflected in reduced export availability this year. Concern about this has already prompted a sharp drop in corn export commitments in recent bilateral agreements with Japan and Taiwan.

Cool, wet weather in large sections of both **East** and **West Europe** has delayed maturity and slowed the harvesting of winter grain crops, but these conditions are likely to have improved spring-planted coarse grain prospects.

The current estimate of West European wheat production is about 1 million tons below that of July 18, but that of coarse grain production by about 2 million tons over last month's estimate and almost 13 million tons above last year's poor crop of 73 million tons.

Excessive rains during the past month in the northern regions of Eastern Europe have reduced the crop quality and may result in quantity reductions. □

[1] FG 11-77, "World Grain Outlook for 1977/78," FAS.

Rains Damage U.K. Grain

Heavy rains over portions of England's main grain-growing areas have dampened earlier enthusiastic forecasts for a record crop. The U.S. Agricultural Attaché's current estimate of the total U.K. grain harvest for 1977 is 15.2 million metric tons. A crop of this magnitude would still indicate an above-average yield, but one somewhat below the 65-bushel-per-acre average yields achieved for all grains in 1974's alltime record outturn.

Actual losses as of the week ending August 26 seemed minimal, but continued substantial rainfall since August 18 caused concern, not so much with respect to quantity, but to quality. Sprouting of the grain while still in unripened ears would divert a significant portion of the milling wheat harvest to feed usage and reduce availability of malting barley.

Seed supplies for the 1978 crop could also be a problem. The market has thus far reflected the expectation that sprout-damaged milling wheat varieties will be diverted into feed use.

As flour millers become more anxious about supplies, feed manufacturers foresee ample availabilities of feed-quality wheat during the current season. Corn usage, already forecast to be near minimum levels, could be cut back even further.

Reports from the Attaché emphasized that further field surveys in the grain-growing area are essential before firm conclusions on harvest volume and crop quality can be reached. □

Some New Approaches To Market Development

"We intend to aggressively seek to maximize commercial agricultural exports," said Dr. Kelly Harrison, General Sales Manager designate, USDA, in a speech before the annual convention of the American Soybean Association in early August. Excerpts from the speech follow.

The Department is taking a hard look at integrated export market program planning. We intend to analyze all the major markets to fit export marketing activities into individual markets. This will allow us to establish priorities for countries and commodities. When this is accomplished, we intend to work with cooperators to develop 3- to 5-year plans for commercial export expansion. These plans will include market development activities by cooperators and, where necessary, credit facilities and commercial supply arrangements with appropriate CCC commitments.

We are carefully examining existing CCC credit programs to determine if they are competitive with other suppliers and are designed to maximize exports. If needed, we will seek legislation to revise the present program.

The role of farmer cooperatives in export marketing is being reviewed. We are discussing with cooperatives their present programs and seeking guidance on how the Department can be of assistance in expanding their direct export sales.

The Multilateral Trade Negotiations appear to be back on track following several meetings between the United States and the European Community. A series of deadlines has been set that would result in completing negotiations before next summer and there is considerable optimism that a successful negotiation can be completed.

We are also looking at policies for trading with centrally planned economies—Eastern Europe, the Soviet Union, and the People's Republic of China. We see this as an especially important growth area for U.S. agriculture and believe that policies need to be established to facilitate this trade.

We are keenly aware of the need in many developing countries for additional facilities that contribute both to economic development of the country and to the market for U.S. agricultural products. Under existing priorities we cannot make this a major aspect of economic development, but it can and will be considered as a part of the total market development package.

The Department has made a lot of progress in the area of export inspection and certification. We feel that there is now more foreign buyer confidence in the quality of the grains and soybeans we are exporting.

The strong commitment of this Administration to staying away from export embargoes was vividly demonstrated during the spring of this year. There were fears expressed by many importing countries that soybean shipments abroad would be curtailed by the supply situation. This did not happen. Thus we are well along the way to reestablishing the United States as a dependable supplier of quality products.

We intend to aggressively seek to maximize commercial agricultural exports. We intend to maximize the input from cooperators in developing sound multiyear programs to achieve this. We will seek to minimize trade barriers that arbitrarily inhibit trade flows.

We will attempt to use food and food aid to help overcome the problems of hunger, poverty, and unemployment in developing countries, including continued and expanded efforts on food production. Also, serious efforts will be undertaken to improve food distribution channels so that more of the world's hungry have access to available supplies.

Secretary Bergland is making a major effort to further the goals of a prosperous American agriculture on a sound, long-range basis—combined with the U.S. obligation to help the poorer countries meet the critical problems of upgrading their agricultural economies. □

Tanzania Sees Gain In Its Economy

Tanzania—one of the world's poorest countries in terms of per capita gross domestic product (GDP)—realized a 5.2-percent increase in its 1976 GDP, fueled by rising returns from coffee exports and other farm commodities.

The country's value of exports rose 50 percent in 1976, with coffee alone accounting for 31 percent of total export earnings. Imports were down some 15 percent owing to Government restrictions and reduced food imports.

Agricultural production in Tanzania increased over the relatively low level of 1975. Corn, cotton, tobacco, tea, and sugar output all showed gains, while wheat, sisal, cashew, and milk production were down.

Food production increased faster than the population growth rate of 2.8 percent, but self-sufficiency was not attained.

Public Law 480, Title I, food shipments continued to play an important role. During fiscal 1976, Title I shipments to Tanzania included 34,590 metric tons of corn and 5,570 tons of rice. Thus far in 1977, Title I shipments have been 17,852 tons of rice.

President Nyerere has stated that the generally poor agricultural performance in recent years was due to a ". . . lack of political leadership and technical understanding at the district and village levels." But the private sector was hindered in many cases by various Government policies.

In the proposed fiscal 1978 budget (beginning July 1, 1977,) public expenditures are up 15 percent. Some 55 percent of the capital budget will be financed from external grants and loans totaling $268 million. Some $23.3 million will be spent on development of major agricultural export crops, such as coffee, cotton, tobacco, and pyrethrum. □

World Poultry Meat and Egg Production To Rise in 1977

Poultry meat production during 1977 in 38 of the major producing and consuming countries around the world is forecast to increase 5 percent to 16.6 million metric tons, compared with the 1976 level of 15.8 million tons.

Broken down by types of poultry meat, turkey meat output will show the smallest increase (2 percent), followed by broilers (5 percent), slaughtered fowl (6 percent), and other poultry (9 percent). Broiler production accounts for approximately 65 percent of total poultry meat.

In 1977, poultry meat output is forecast to expand in all the regions reviewed by the FAS Dairy, Livestock, and Poultry Division.

Production in North America—led by a 5-percent gain in broiler production—will rise almost 4 percent to some 6.4 million tons from the 1976 level of 6.1 million. Turkey meat production, after a 13-percent gain in 1976, is forecast to remain unchanged at 1.06 million tons in 1977.

The countries of the European Community (EC) and those of the rest of Western Europe are each forecasting production increases in poultry meat of 3.5 percent in 1977 (3.4 million tons in the EC and 4.5 million in the rest of Western Europe).

These gains in poultry meat production include the United Kingdom (6 percent), West Germany (5 percent), Spain (6 percent), and Portugal (8 percent). Almost all of the countries throughout Western Europe are predicting higher production, with the two largest producers—Italy and France—indicating gains of 3 percent each. While there are increases in all categories of poultry meat output, the largest is in broiler meat production, with a rise of between 4 and 5 percent.

The countries of Eastern Europe—with gains indicated for almost each country—will average a total gain of 6 percent to 1.6 million tons, compared with 1.5 million in 1976. Poland, with a 14-percent jump, will show the largest gain in poultry meat output.

In the USSR, which is recovering from the reduction in flocks and lower outturn of 1976, an increase of 14 percent is forecast to 1.6 million tons, compared with 1.4 million last year. Meat from culled layers comprises some two-thirds of Soviet poultry meat production, and its recovery provides much of the basis for 1977 growth.

For other large producers of poultry meat—Japan, South Africa, and Australia—gains of 6, 8, and 1 percent, respectively, are forecast.

Egg production during 1977 in the 34 countries reviewed by FAS is expected to rise almost 2 percent above that of 1976 to some 310.6 billion eggs. But this production gain varies greatly by country and area.

For the United States and the EC—each with about 21 percent of the total production reviewed—gains of less than 1 percent are forecast. Japan, the fourth largest egg producer, is expecting a decrease of less than 1 percent.

However, the USSR—the third largest egg producer—is expected to more than recover from its 1976 decline with a 5-percent gain in output to 58.4 billion eggs.

Italy Expands Tomato Area

Italy's area planted to tomatoes for fresh and processing use this year is about 100,000 hectares, up by 5-6 percent from the 1976 area but 12 percent smaller than in 1975.

Preliminary estimates for the 1977 tomato crop point to an 8-10 percent rise over last year's output of 2.8 million metric tons, but still below 1975's 3.1 million tons.

Planted area in northern Italy is smaller by about 20 percent than the 1976 total, largely because of poor returns from the 1976 crop, which caused producers to switch to onions, corn, barley, and other spring/summer crops.

In southern Italy, area planted to tomatoes is 20-25 percent above that of 1976, mainly as a result of good returns on last year's harvest. Area sown to improved varieties (generally of U.S. origin) is increasing in southern Italy.

During 1976, rising production costs weakened the competitive position of Italian tomatoes in world markets, despite the higher export subsidies offered by the European Community.

Italy's exports of canned tomato products during July-December 1977 are not likely to exceed the high level of 1976.

Many Italian canneries—especially in the south—have reduced or ceased operation because of high interest rates, scarcity of capital, and other restrictive economic conditions.

Also, the application of the 1976 law reducing the permissible mold content in canned tomato products has necessitated technical improvements in canneries as well as higher quality fresh tomatoes.

In past years, canners and producers signed agreements before the start of harvesting as to quantities to be purchased and prices to be paid. This year, no such contracts were signed. □

Based on a dispatch from Elmer W. Hallowell, U.S. Agricultural Attaché, Rome.

Morocco Ups Wheat Imports

Morocco's once-promising outlook for winter cereals has been dashed by floods in the north, drought in the south, and hot shergui winds everywhere during April.

As a result, wheat imports during July 1977/June 1978 will be up to about 1.6 million tons from the 1 million tons imported during the preceding 12-month period. The capacity of the ports to handle grain, rather than demand, will be the limiting factor.

Bread wheat is expected to account for most of the wheat imports, although some Durum wheat may be imported. If financial re-

In Spain and Mexico, smaller but substantial producers, gains of about 5 percent are also anticipated.

International trade for poultry meat is forecast to increase in 1977, but not to the same extent as in 1976. The rise in trade may again be led by larger imports into Far Eastern and Middle Eastern markets.

Whole broilers, chicken parts, and fowl exports in 1977 are showing rapid gains; however, turkey exports—particularly to the EC and Canada—have fallen sharply.

Trade in eggs, which rose in 1976, is forecast to rise again in 1977 at an equal or possibly faster rate than that of last year. The most rapid growth—as with poultry meat trade—may be in the Far East and Middle East regions, as well as in Venezuela. □

From FAS Circular FPE 4-77, August 1977.

sources permit, there may be some imports of barley or corn.

Morocco's total cereals area for the 1977 crop was 4.3 million hectares—99 percent of the area sown for the 1976 crop. Yields, however, will be far below those of 1976. Production is expected to be scanty in all areas except the upper Atlantic coast region, where rainfall has been normal.

About 20,000 hectares of cereals were lost to floods in the Gharb Valley early this year, but the land was replanted to corn, pulses, sunflowers, and other spring crops. Barley and Durum, the major cereals, were hard hit by drought in the south. Some farmers in the Tadla Plateau were unable to plant winter cereals at all for lack of sufficient rain.

Spain Cuts Peseta Value

The 20-percent devaluation of the peseta by the Spanish Government on July 12, 1977, is not expected to hurt U.S. exports to Spain (valued at $617 million in 1976); nor is it likely to cut demand for feedgrain imports.

On the import side, the peseta devaluation (from US$1=69.80 pesetas to US $1=87.30 pesetas) will not mean increased U.S. imports of Spain's farm products, which amounted to $171 million in 1976. (Olives, wine, and olive oil traditionally account for the bulk of these imports.)

The peseta devaluation will not be enough to compensate for the increase in Spanish export prices, which rose by 16 percent last year and are showing an equally strong upward trend so far this year.

Most of the Spanish grain trade and feed manufacturing industry officials contacted by the Office of the U.S. Agricultural Attaché in Madrid believe that feed utilization is in part determined by price, but it is also determined by the method in which poultry and hog rations must be formulated.

Another important factor is that the effects of the devaluation (increased prices in terms of pesetas) have been softened by the declines in the market price of feedgrains and soybeans this year.

Consequently, the devaluation is not likely to have a great effect on demand for corn or soybean meal, which, along with soybeans, made up more than 80 percent of U.S. exports to Spain in 1976.

Spain's domestic livestock industry requires these commodities and there are no suitable substitutes. The Government is expanding its livestock industry and attempting to cut livestock food imports that amount to $200 million annually.

Soybean meal remains one of the cheapest sources for protein feed supplements, particularly in view of the rising cost of fishmeal.

The general feeling in the Spanish livestock and poultry industry regarding demand for meat during the next 6 months remains optimistic. Despite the devaluation's consequent higher costs to the consumer, demand for domestically produced meat and meat products should remain firm.

Traditional meat substitutes such as fish and dried beans are becoming increasingly expensive. In addition, imports of beef are unlikely, as Spain does not have the money to purchase beef at current prices.

The Government's new economic policy has been revealed only partially.

While the devaluation was the chief move to reduce the country's huge balance-of-trade deficit—estimated at about $8 billion in 1977—other measures to curb imports including hiking prices of imported food products such as flour and coffee by up to 20 percent and promoting consumption of domestic products.

The Government recently raised the retail price of soybean oil by 26 percent to 62 pesetas per liter in order to protect the market for higher priced domestic olive and sunflower oils.

Previously, the Spanish Government had established market control procedures for soybean oil, deleted export subsidies on soybean oil, and cut down on Government acquisition from crushers.

Also, since August 1, edible oils from domestic oilseeds have been priced freely, while oils from imported oilseeds remain subject to maximum retail prices, so as to discourage their profitability.

Spain produces 320,000 tons of soybean oil from some 2 million tons of imported soybeans. In 1976, about 1.2 million tons of these soybeans, valued at $254 million, were imported from the United States.

Earlier in 1977, the Spanish Government limited consumption of edible oils from imported oilseeds to 170,000 tons (one-third below the 1976 consumption level), while producing 330,000 tons—nearly all from soybeans.

Because of the Spanish Government's regulatory restraints, the impact of the price increase on soybean oil consumption is expected to be minor, since soybean oil remains the lowest priced edible oil on the market. □

Based on reports from George J. Dietz, U.S. Agricultural Attaché, Madrid, and James Lopes, agricultural economist, Economic Research Service.

USSR Feeding Trial Shows Good Results For U.S. Feedgrains

United States corn and grain sorghum in combination could be economical feed ingredients for the rapidly expanding Soviet poultry industry, according to results of a poultry feeding trial held in the USSR this past winter.

The trial was conducted by PTITSEPROM—the Soviet Ministry of Agriculture's industrialized sector for poultry production—in cooperation with the U.S. Feed Grains Council (USFGC), marking USFGC's first market development venture in the USSR.[1]

The experiment measured the performance of 512 birds during a 50-day feeding period, comparing four grain rations: U.S. grain sorghum, U.S. corn, Soviet corn, and a 50-50 combination of U.S. corn and sorghum.

Final results showed that U.S. corn and sorghum in combination produced the greatest feeding efficiency of the four and the lowest cost per pound of dressed meat.

USFGC representatives are hopeful that the trial will lead to Soviet interest in U.S. corn and sorghum for poultry feed. In 1976 the USSR imported 9.47 million metric tons of U.S. corn but only 2,000 tons of sorghum for use as seed out of a total grain import from this country of 11.26 million tons.

And plans are now underway for future projects in the USSR, including a prospective seminar on ration formulation and grain processing for cattle, swine, and poultry.

Kenneth Hobbie, Market Development Director for USFGC, traces the project's beginning to a side trip into the USSR by a U.S. grain sorghum mission that conducted seminars throughout Europe during late 1975. The team's pitch was that U.S. No. 2 Yellow sorghum's low level of tannic acid made it a more attractive feed ingredient than darker varieties formerly grown in the United States and still predominant in Argentina and other producing countries.

"Poultry and livestock find high tannin sorghum less palatable than the low tannin U.S. yellow sorghum, and as a result their feed intake drops off," said Hobbie. Conversely, feeding efficiency improves with low-tannic-acid sorghum, although careful feed formulation still is necessary to obtain maximum results, as with any livestock feed ingredient.

The sorghum team gained the interest of Soviet officials, who asked USFGC to submit proposals for a more comprehensive demonstration using grain sorghum and corn in rations for beef, swine, and poultry. The proposals were submitted in December 1975.

Following several consultations with Soviet officials, the project was launched on December 4, 1976, at the All Union Poultry Research Station in Ptitsegrad near Zagorsk. The feeding trial lasted for a 50-day period, with preliminary data taken and a shift in rations made at 4 weeks.

Provisions for the experiment included wire-floored, colony-type flat-top cages; dim, constant lighting; one circular, can-type feeder per pen; and water on one side of each cage. Each of the four feeding groups had two replicate pens housing 64 birds apiece.

These birds were fed one of the four rations—either U.S. No. 3 Yellow corn, U.S. No. 2 Yellow sorghum, Ukrainian corn, or the 50-50 combination of U.S. corn and sorghum. Also going into each ration were soybean shred, fishmeal, bonemeal, yeast, grass flour, vegefat, chalk, salt, vitamins, and minerals.

The best feed efficiency level in the experiment came from the 50-50 corn-sorghum ration. This was followed, in order, by U.S. corn, Ukrainian corn, and U.S.

[1] **USFGC—an 89-member nonprofit agricultural association representing U.S. feedgrain seedsmen, producers, handlers, and allied tradespeople—is one of the more than 40 agricultural groups that cooperate with the Foreign Agricultural Service in overseas market development activities.**

By Beverly Horsley, Associate Editor, *Foreign Agriculture*.

World Cotton Output To Rise in 1977/78

Generally favorable weather conditions in most Northern Hemisphere cotton-producing countries have boosted 1977/78 world cotton production estimates 11 percent to 64.2 million bales (480 lb net), compared with 57.7 million in 1976/77.[1]

World cotton area for 1977/78 is estimated at 32.7 million hectares—an increase of 4 percent over that of the previous season—in response to attractive prices earlier this year.

World consumption prospects for 1977/78 depend heavily on economic developments in industrialized nations. Consumption is expected to be weak during the first half of the season.

In addition, mill consumption has been sluggish in recent months, resulting in a cut in the projected 1976/77 consumption to 60.9 million bales.

Projected increased economic activity in 1978, coupled with expected larger cotton supplies, should result in an upturn in textile demand and cotton use. Stocks during 1977/78 are expected to increase by some 2-3 million bales from the low 19.2-million-bale

[1] **Based on analysis of past forecasting error and the judgment of reviewing analysts, the likelihood is at least 2 out of 3 that final 1977/78 production will not differ from this estimate by more than 5 percent.**

grain sorghum.

The grain and fat cost per pound of dressed broiler came out to 10.06 U.S. cents for the corn-sorghum ration, 10.41 for sorghum, 10.81 for U.S. corn, and 11.33 for Ukrainian corn (based on February 10, 1977, U.S. gulf prices of $98.78 per metric ton of grain sorghum and $110.03 per ton of corn). This, in turn, translates into a cost savings per ton of dressed meat of $28 for the corn-sorghum ration, vis-á-vis the Soviet corn ration, and savings of $20.28 and $16.53, respectively, for the U.S. sorghum and corn rations.

According to Hobbie, the project's goal was threefold:

- Demonstrate the increased efficiency of U.S. No. 2 Yellow grain sorghum over traditional sorghums;
- Promote the further use of U.S. corn for faster weight gain and reduced costs; and
- Introduce to Soviet poultry raisers the concept of high-energy grain rations. Although Soviet corn was used in the experiment, "little corn reportedly is going into traditional Soviet poultry rations, and birds have been finishing out at lighter weights over the same 50-day feeding period," said Hobbie.

A large grain producer in its own right—in fact, the third biggest next to the People's Republic of China and the United States—the USSR nonetheless is often short of grains for its rapidly modernning livestock industry. This deficiency arises in part because most of the crop is in wheat or less-efficient feedgrains such as barley and oats and, in part, because of the great variability of Soviet production. For instance, in just the last 2 years, Soviet grain output has ranged from a 10-year low of 140 million tons in 1975 to a record 223.8 million in 1976.

Consequently, the Soviet livestock industry is periodically forced into distress slaughtering—especially of poultry and swine—in order to extend limited feedgrain supplies. In turn, the belt-tightening among consumers has been a heated political issue, given the population's increased demand for high-protein foods.

Hobbie sees imported U.S. grain sorghum and corn as products that can help lessen such problems: "What we're trying to do is provide them with an economic way of feeding livestock to avoid heavy slaughtering during periods of short domestic grain supply. This slaughter, in turn, retards their ability to meet consumer demand for meats and reduces their potential need for U.S. grain."

Soviet officials, meantime, have exhibited measured interest in further feeding trials and seminars. In May 1977, Dr. Quisenberry and William Briggs, a feed milling specialist for the Council, conducted a seminar for PTITSEPROM on feed processing and ration formulation. And interest has been rekindled in a proposal made last year for a 2-5 day seminar on processing and formulation of feed for all types of livestock.

"We've gotten a lot of spinoffs from the poultry feeding trial and made quite a bit of progress," Hobbie said. "I think it's going to have a long-term effect on improvement of broiler production in the Soviet Union. But, of course, the real payoff will be when they buy that first boatload of U.S. sorghum and increase their purchases of U.S. corn." □

level estimated for August 1, 1977.

Cotton prices have fallen steadily since the mid-March peak; while the gap between cotton and polyester prices has narrowed, cotton is still selling above the price for manmade fibers.

Prices per pound of U.S. cotton in Northern Europe and Osaka have fallen about 20 cents or more below March levels.

World cotton trade for 1976/77 is estimated at 18.2 million bales, 3 percent less than in 1975/76. Shipments from the United States were some 4.9 million bales, compared with 3.3 million in 1975/76. U.S. cotton exports for 1977/78 are projected at 4.6 (± 0.5) million bales.

Based on August 1 conditions, the U.S. crop is estimated at 13.5 million bales, 28 percent larger than the 1976 crop.

The 1977 cotton crop in the USSR has suffered from early dry and hot weather, as well as torrential rains, localized flooding, and an earthquake.

Despite the vagaries of weather, it is possible that the Soviet crop could exceed the 12.2-million-bale record of 1974.

The People's Republic of China may have planned originally to boost cotton area in 1977, but dry weather in northern producing areas and heavy rains in central China disrupted planting. Output is projected to be slightly less than the 1976 estimate of 10.8 million bales.

Mexico has planted 380,000 hectares this season, 54 percent more than in 1976. While yields may be somewhat less than during last year, the Mexican crop could be in the range of 1.4-1.5 million bales.

Turkey's cotton crop could approximate the 2.8-million bales produced in 1974, which was a record outturn. Cotton area for 1977 is estimated at 800,000 hectares, 38 percent greater than in 1976.

Unfavorable weather, insufficient incentives to farmers, and insect infestation are problems that may keep Pakistan's cotton production lower than the 2.6 million bales expected.

In southern Brazil, where planting begins in September, cotton area is expected to show a decrease. Depending on the size of the area reduction, Brazil's output may be well below the 1976/77 level of 2.3 million bales. □

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PRC Sugar Imports Up

The People's Republic of China (PRC) sugar imports in 1977 will exceed 1 million metric tons, compared with the 1976 import level of 500,000-600,000 tons. Although the PRC's sugar production increased in 1976, foreign purchases probably were increased to take advantage of relatively favorable world prices and perhaps to build stocks.

Sugar imports in 1977 will exceed the 1970-76 average of roughly 500,000 tons. However, speculation that PRC imports may reach a level close to the 1961 record of 1.5 million tons should be viewed with caution.

So far, confirmed shipments of sugar to the PRC from Australia, the Philippines, and Thailand have reached nearly 700,000 tons and higher levels are expected.

Purchases from Australia in 1977 have already reached 260,000 tons and could go higher. Of this amount, 78,200 tons have been shipped by Australia in the period January-March 1977.

In the first quarter of 1977, the Philippines delivered 210,600 tons of sugar to the PRC, apparently under the agreements reached earlier in the year for delivery of 250,000 tons this year and 50,000 tons yearly for the next 4 years.

Another agreement for 1977 delivery of 75,000-150,000 tons of Philippine sugar was reached in June, bringing the total possible PRC purchases of Philippine sugar to 450,000 tons, if it is all delivered.

By May, Thailand reportedly already had delivered 386,000 tons of sugar to the PRC. Additional shipments of Thai sugar may be made in calendar 1977 since new contracts are rumored and the ultimate size of previous contracts is unknown.

In addition to the purchases already confirmed, other suppliers may provide the PRC with sugar imports this year. Cuba, formerly the major supplier, in recent years has continued to supply roughly 150,000-200,000 tons. Brazil apparently also has an understanding for a long-term supply of up to 200,000 tons yearly; however, no known purchases have been made under this agreement. There are also several minor suppliers that have sold sugar to the PRC recently and may continue to supply as much as 10,000-50,000 tons total.

Although 1977 sugar imports are not yet at a record level, they are among the highest in recent years and are far greater than the recent low 1975 level of 235,000 tons. However, PRC sugar imports are not likely to increase without a significant change in PRC trade policy.

It seems most likely that the low sugar import level of 1975 was the exception and the higher levels of 1976 and 1977 reflect a desire to return to a more normal import level. In the past, the PRC has bought sugar when low world prices prevailed. Apparently the PRC is taking advantage of the depressed world sugar market during this year.

In view of the world sugar surplus and the comparatively low world price levels, it is an opportune time to buy.

Despite several years of increased PRC sugar production, stocks also may have been down after the low levels of imports in 1975. □

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People's Republic of China: Raw Sugar Imports and Exports, 1970-76

[In 1,000 metric tons]

Year	Imports	Exports
1970	530.4	87.6
1971	463.9	116.7
1972	749.0	155.9
1973	735.8	155.0
1974	410.6	50.5
1975	235.2	53.4
1976	500-600	(1)

[1] Not available.